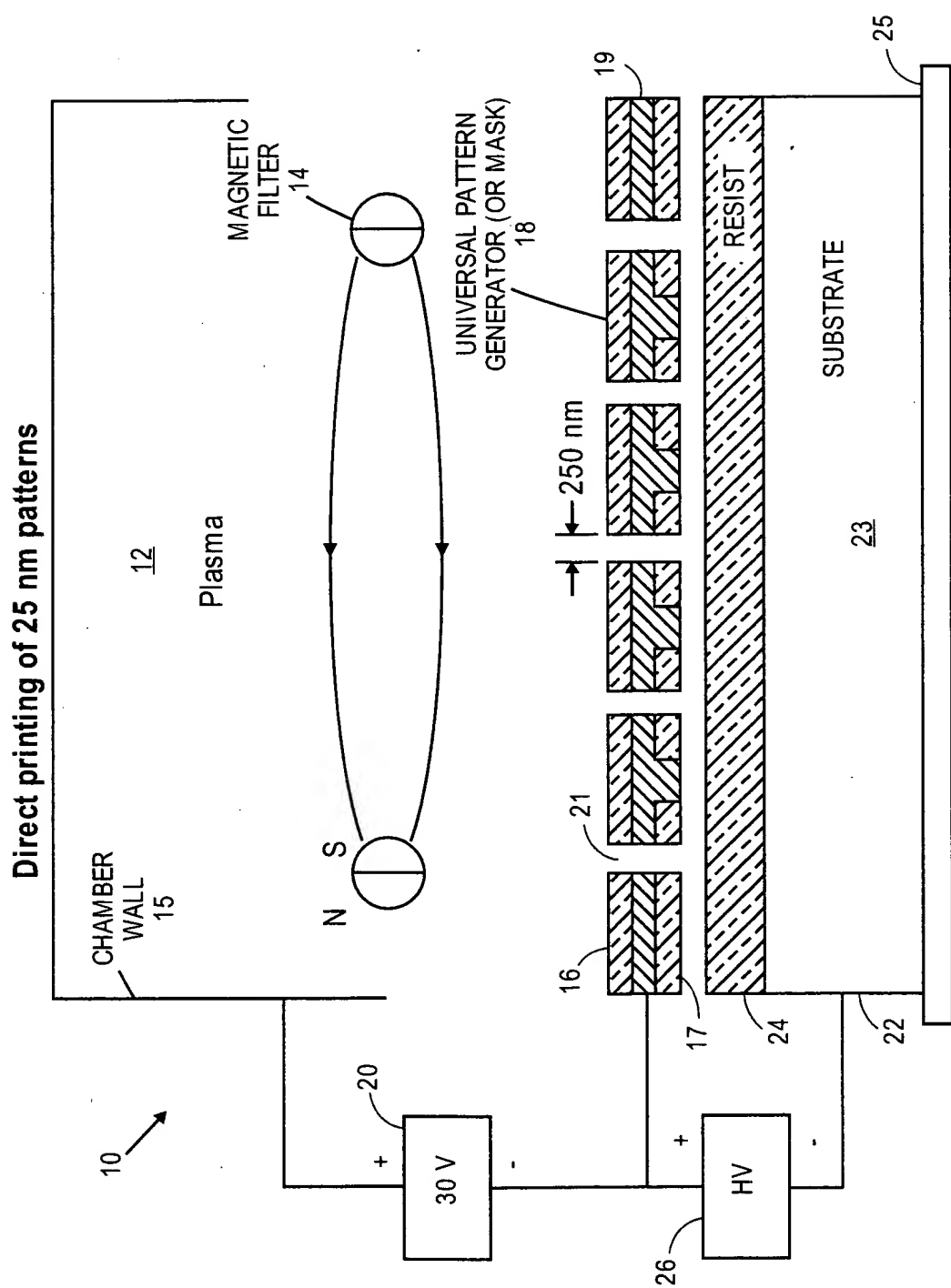


FIG. 1



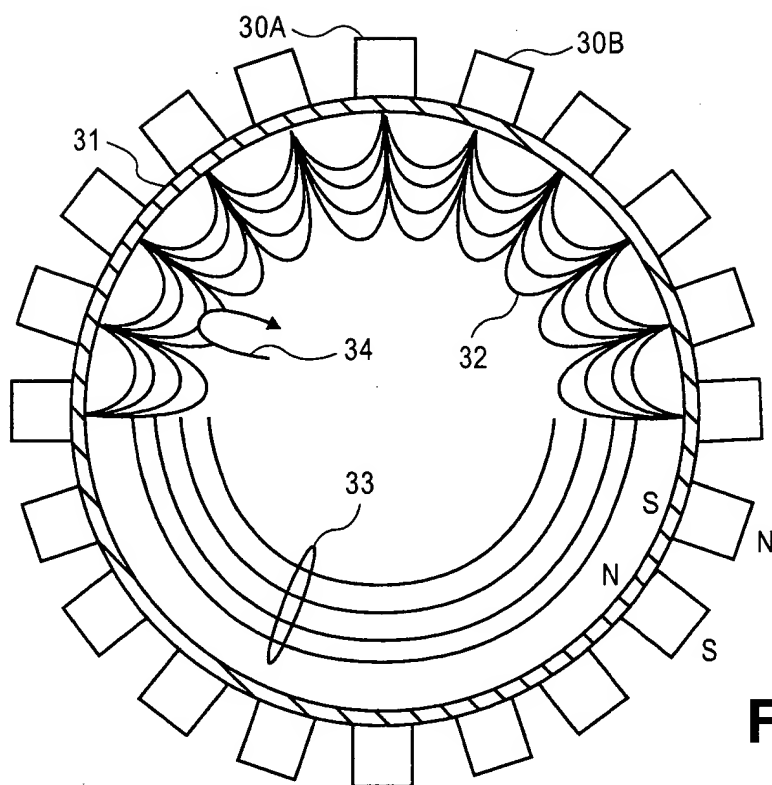


FIG. 2A

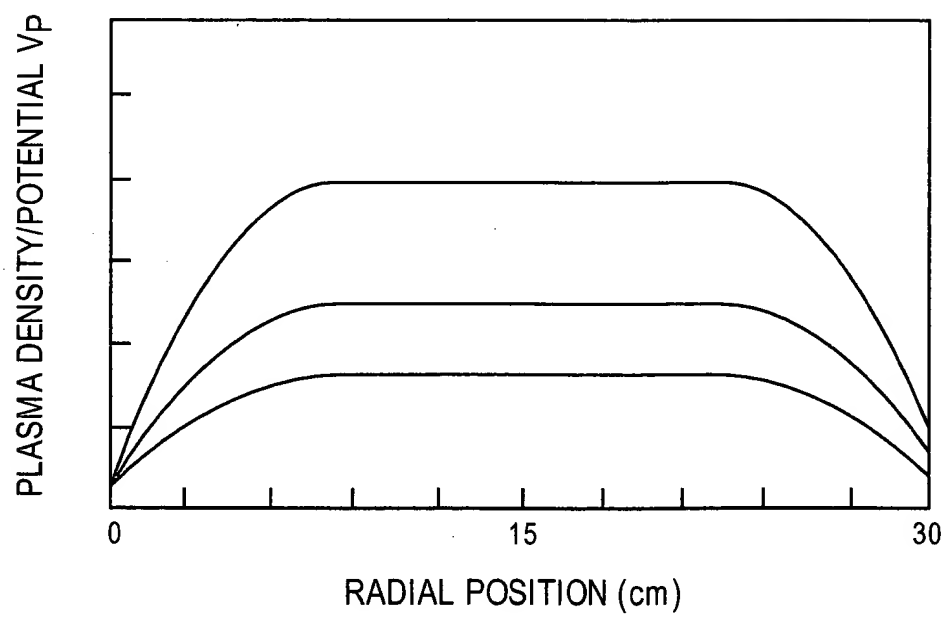


FIG. 2B

FIG. 3

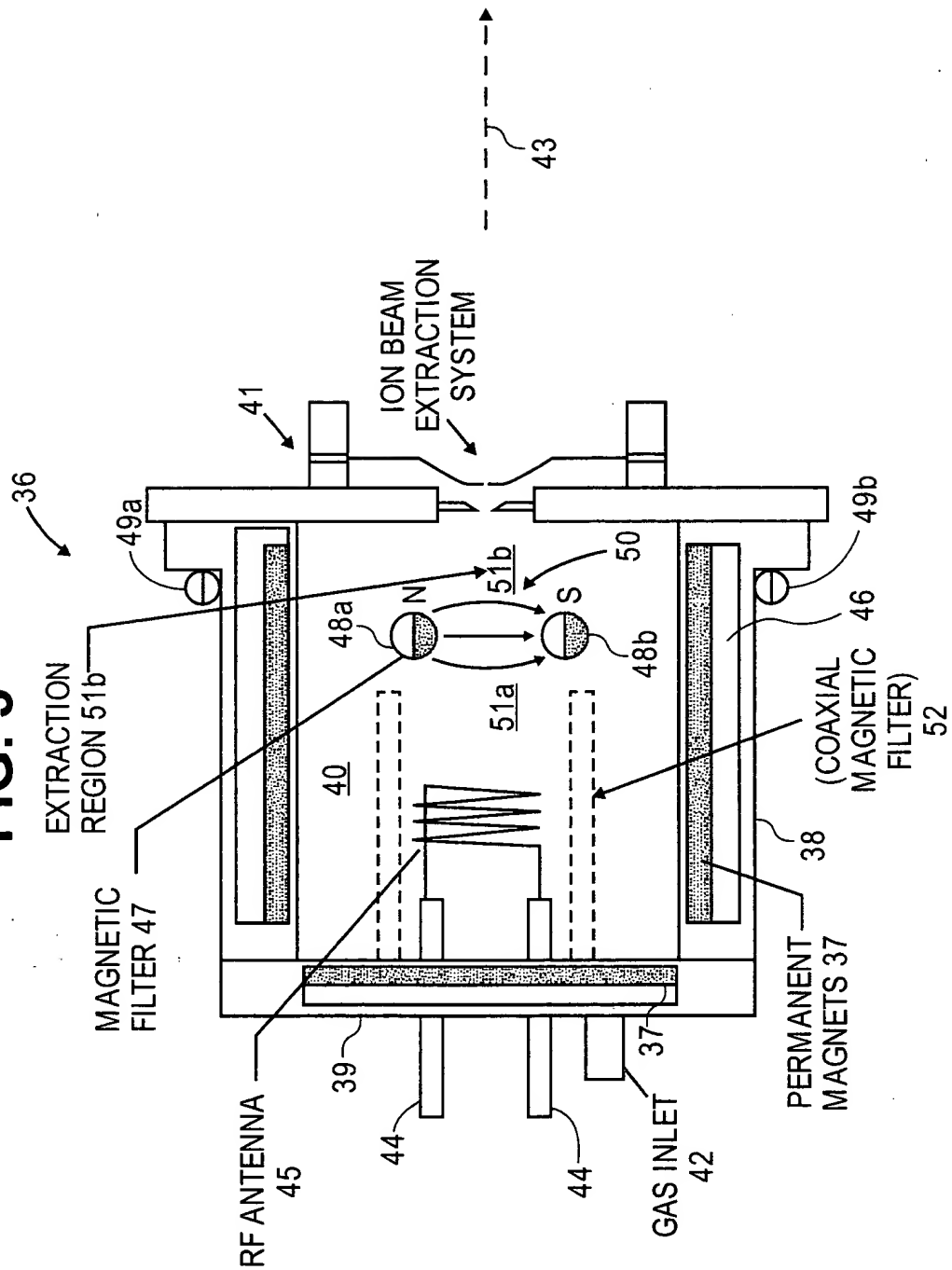


FIG. 4

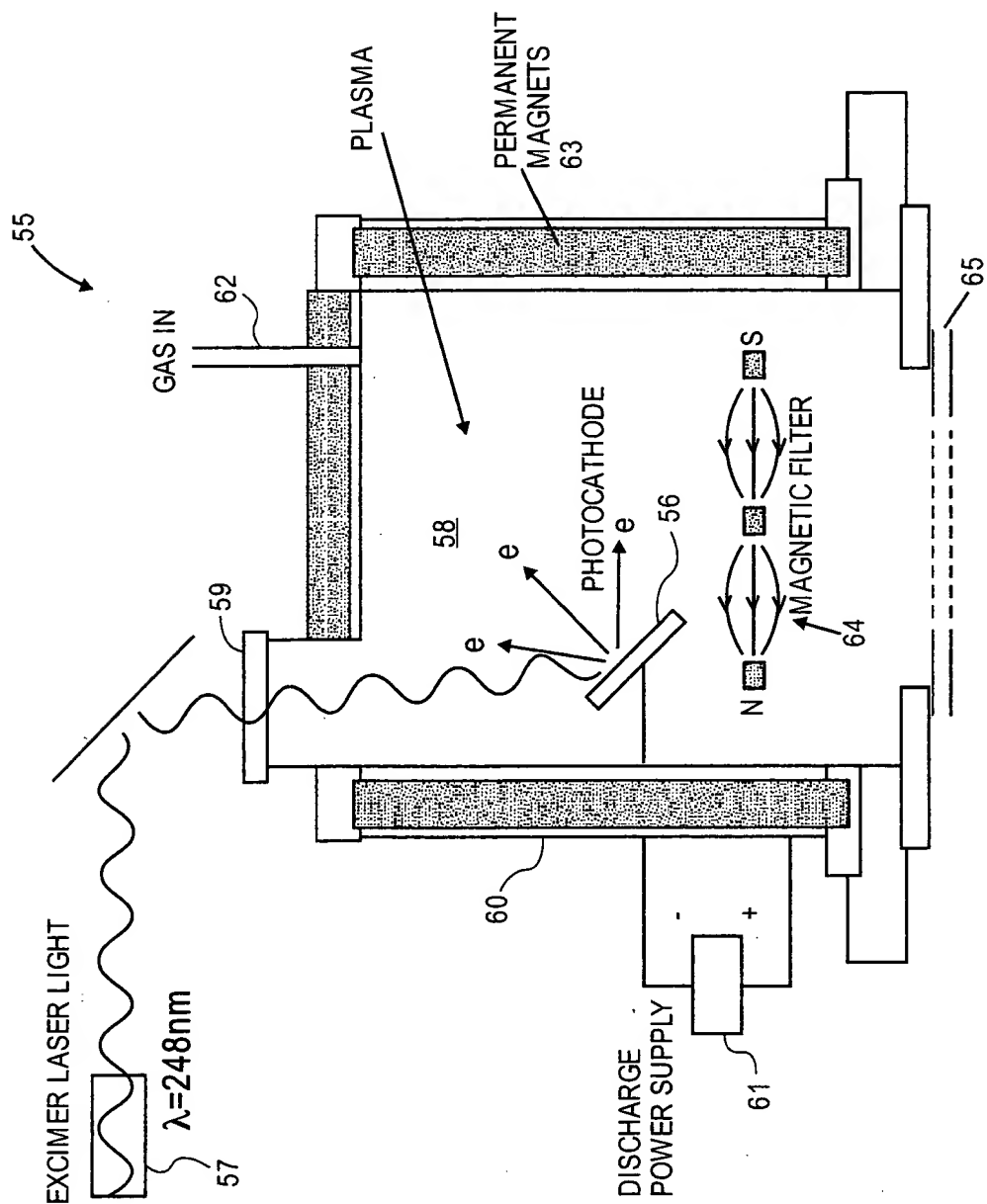
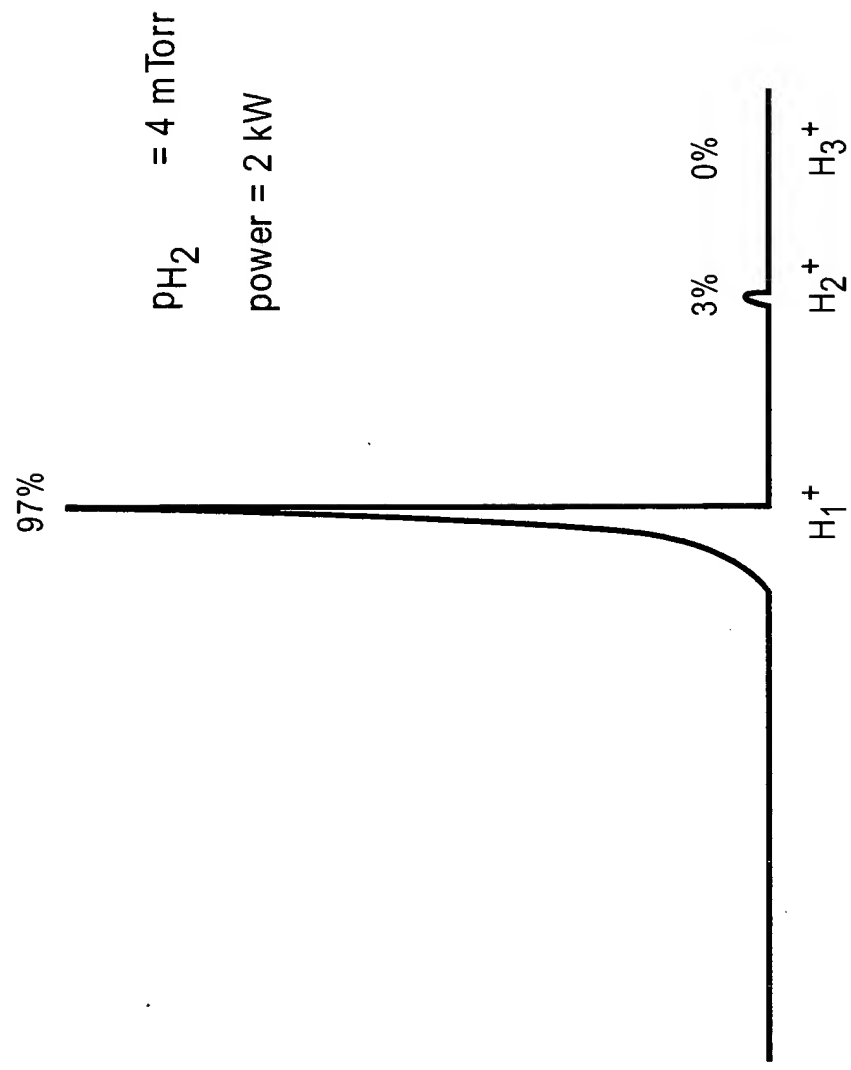


FIG. 5



9

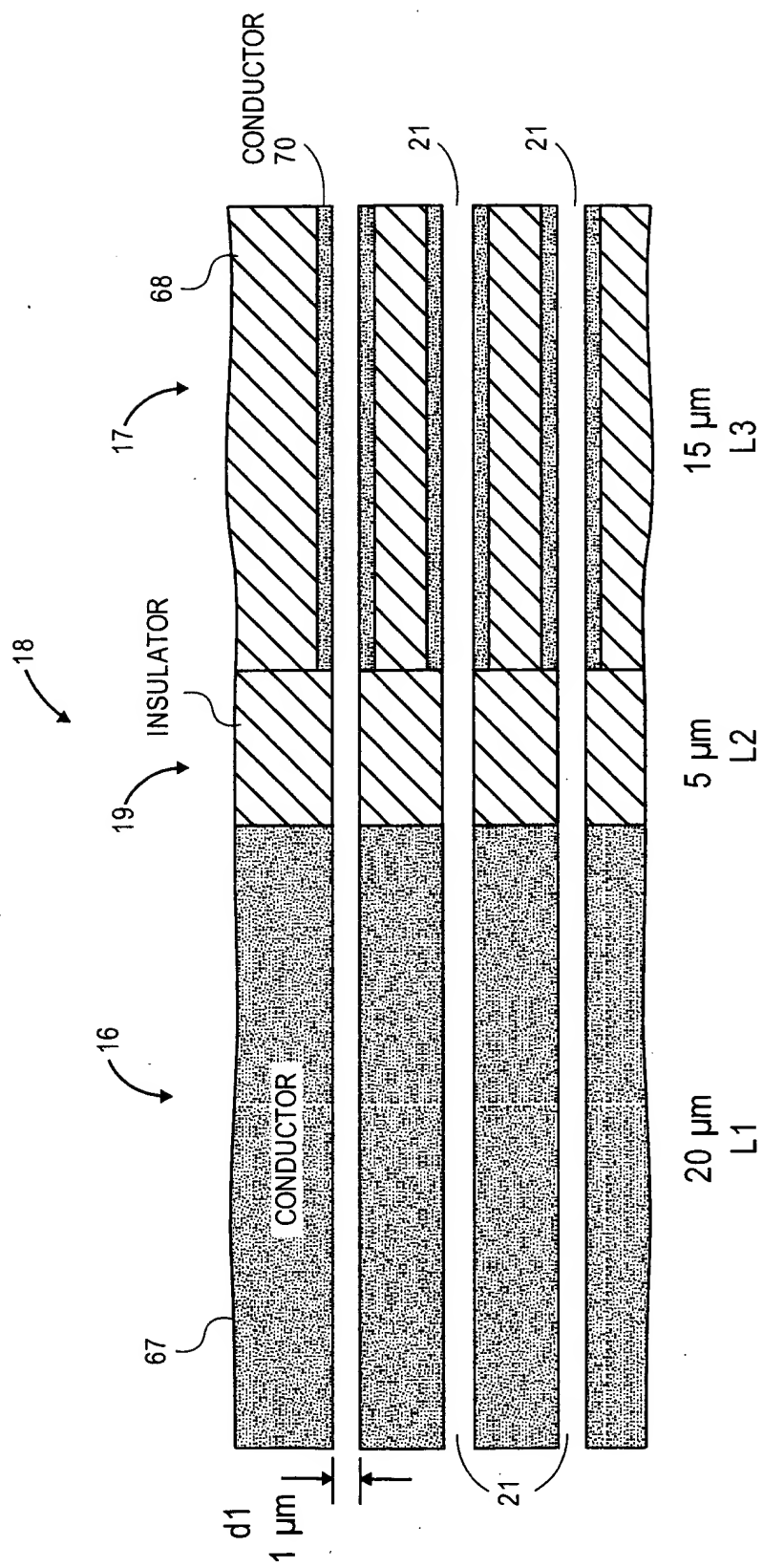


FIG. 6B

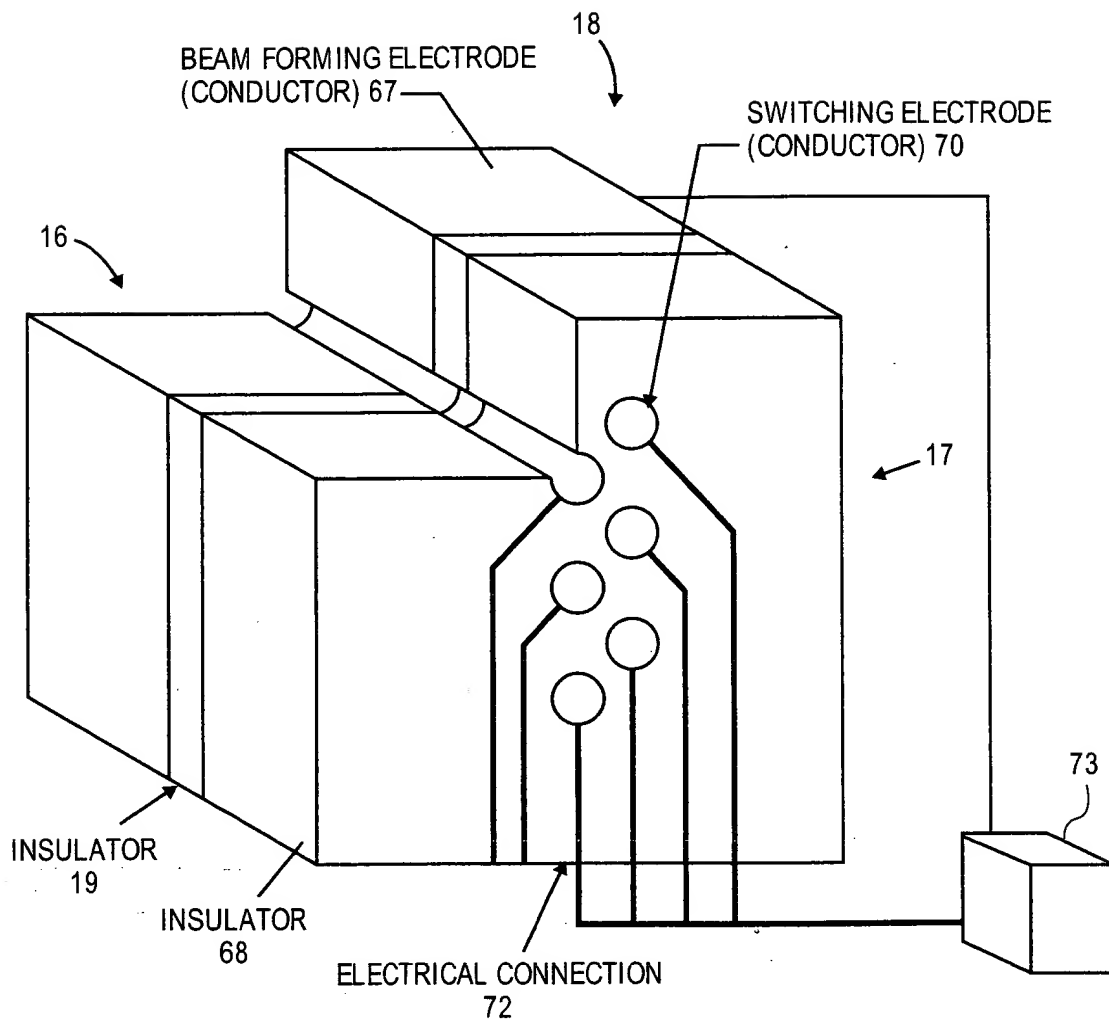


FIG. 6C

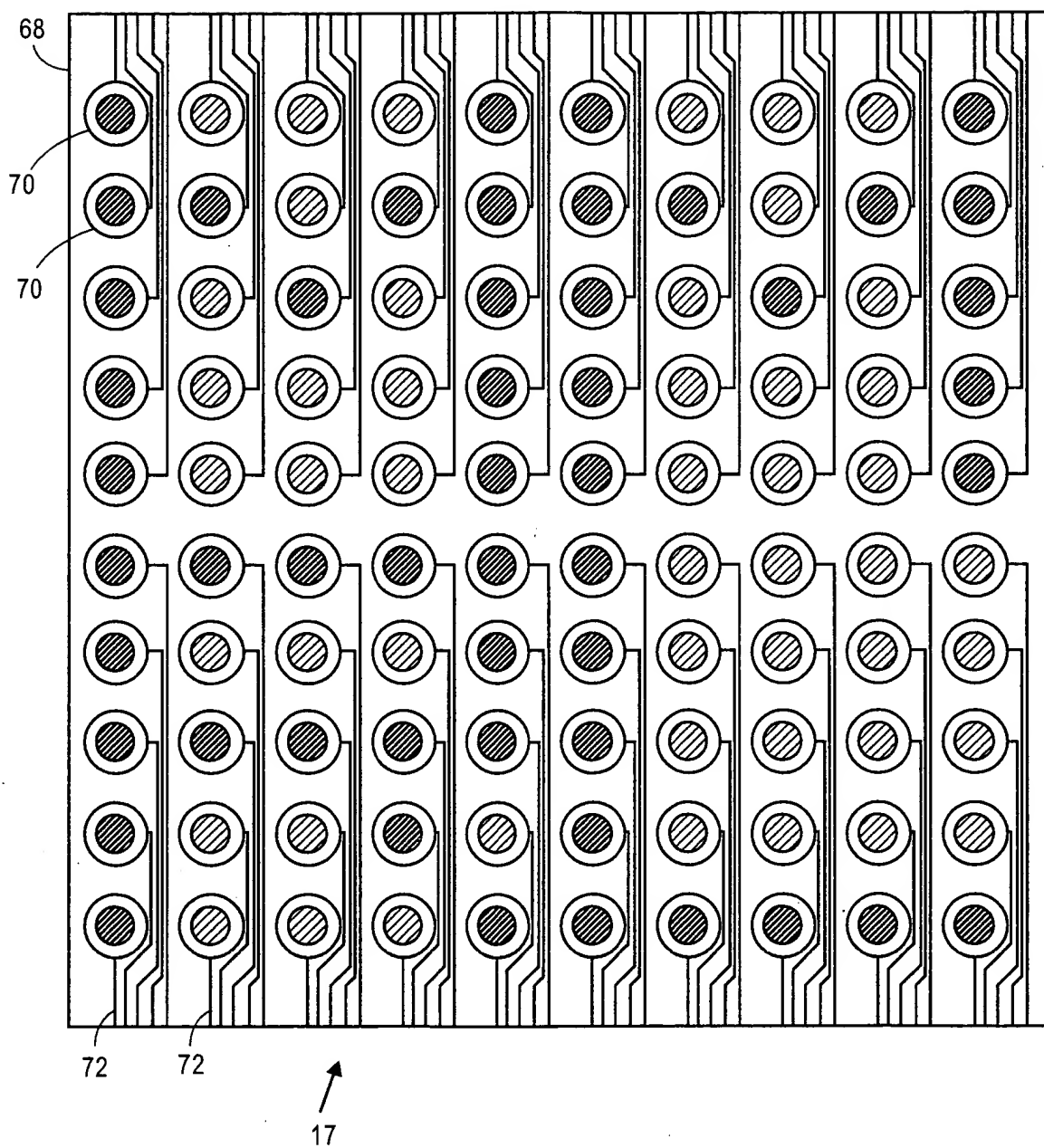


FIG. 6D

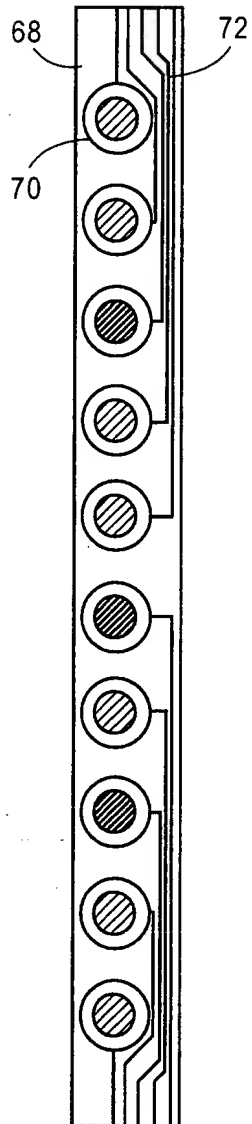


FIG. 6E

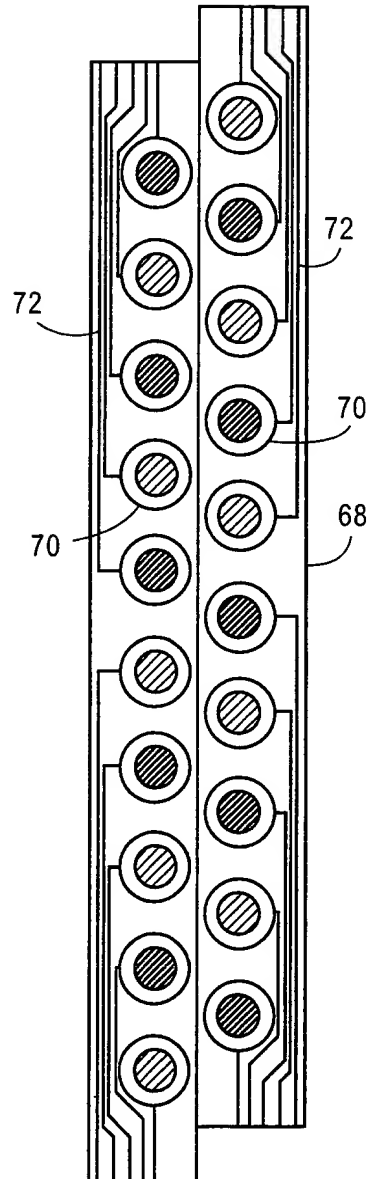


FIG. 7

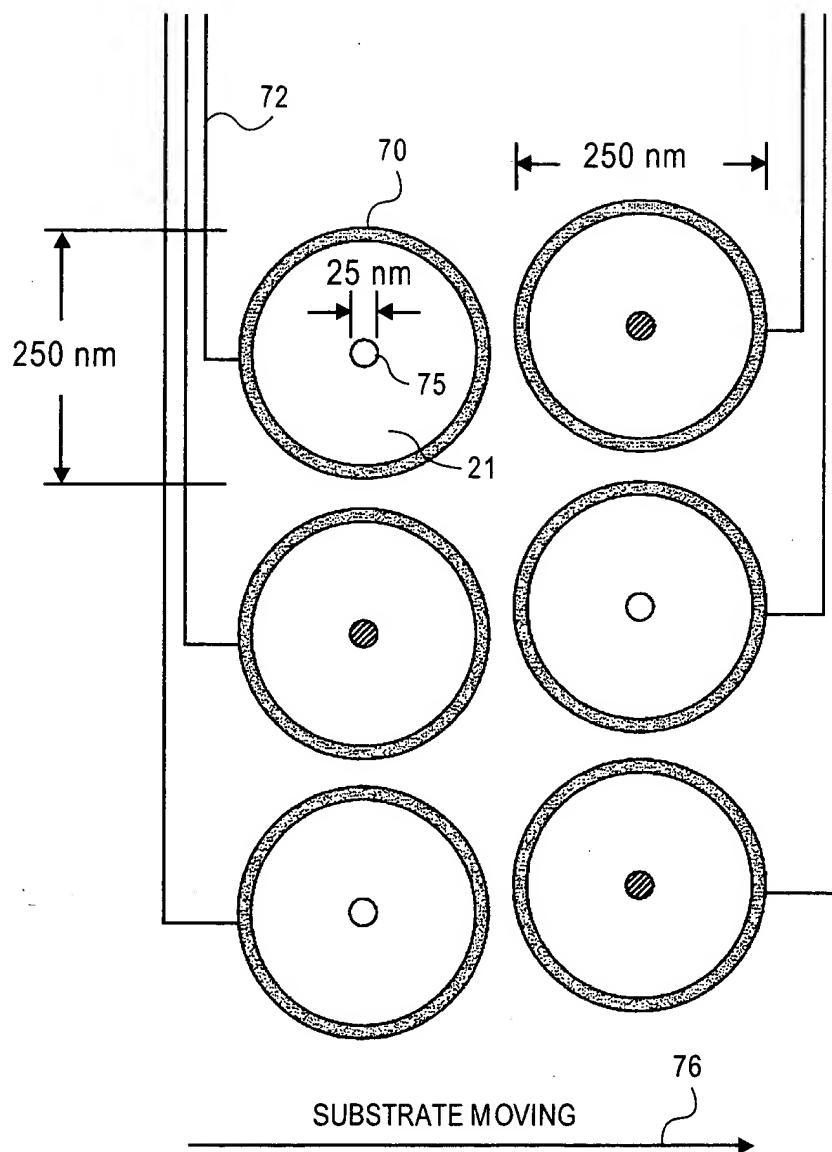


FIG. 8

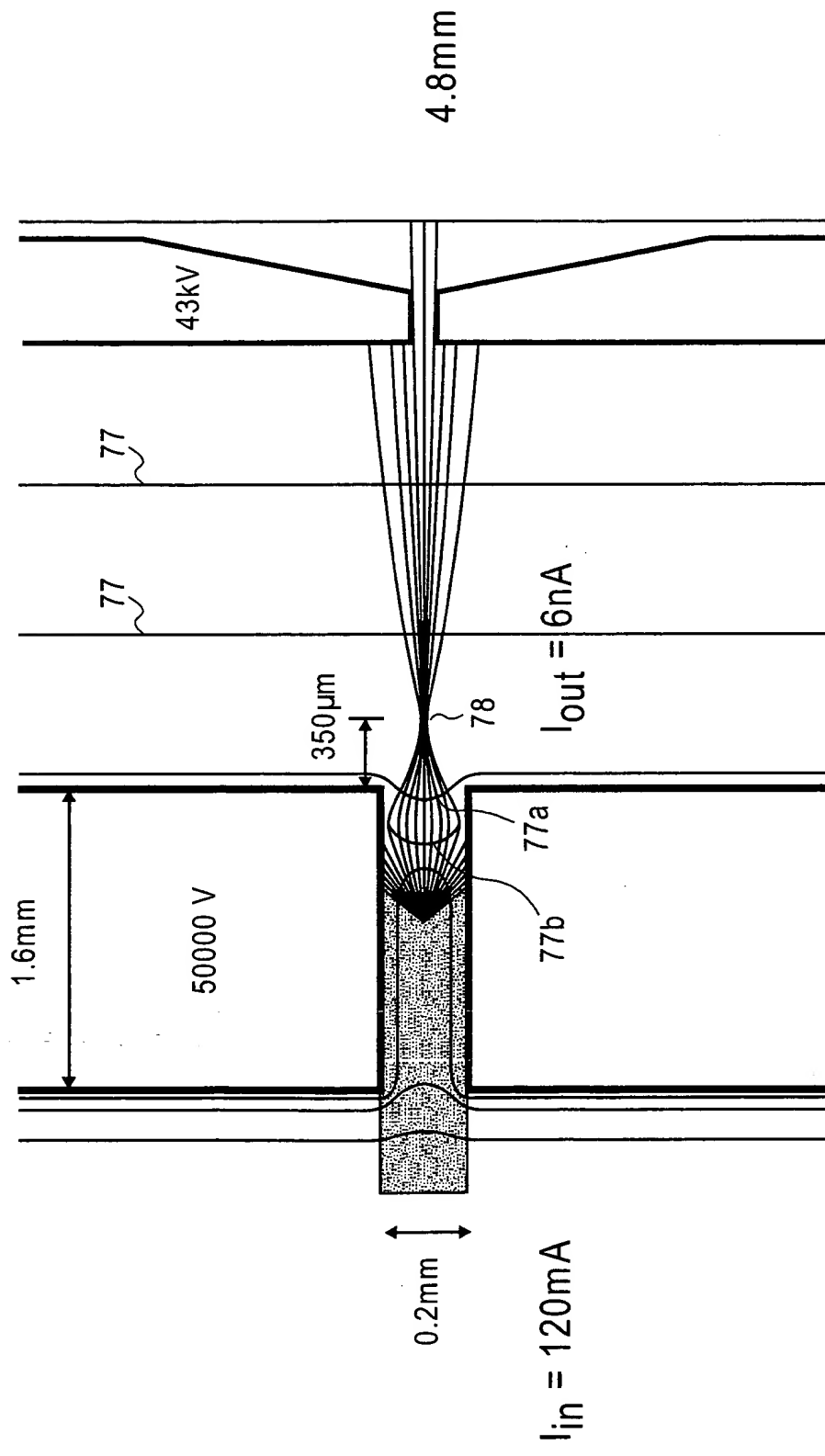


FIG. 9

Beamlet Extraction from Pattern Generator

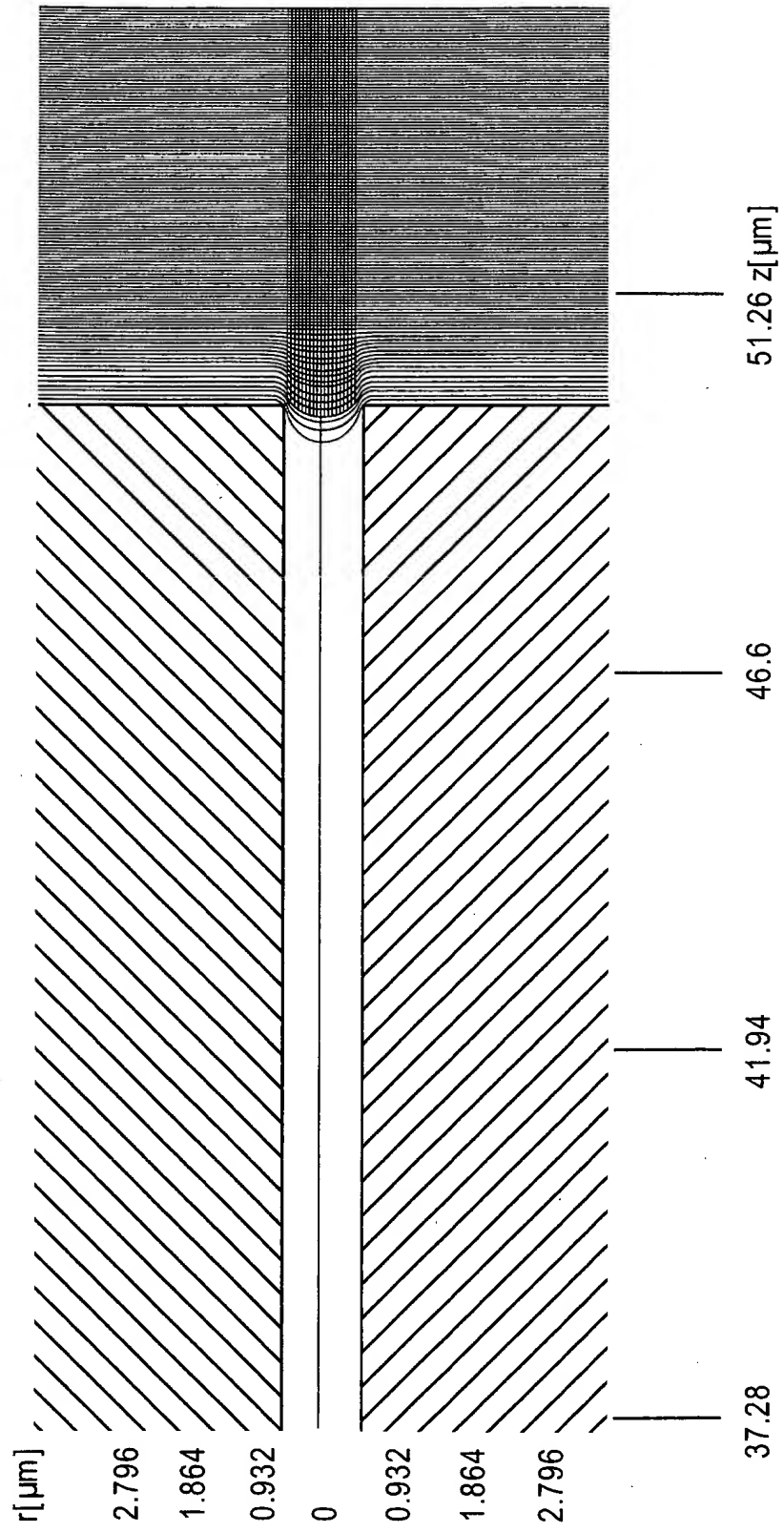


FIG. 10

Beam Extraction $E=300$ kV/cm, $\varnothing=1\mu\text{m}$

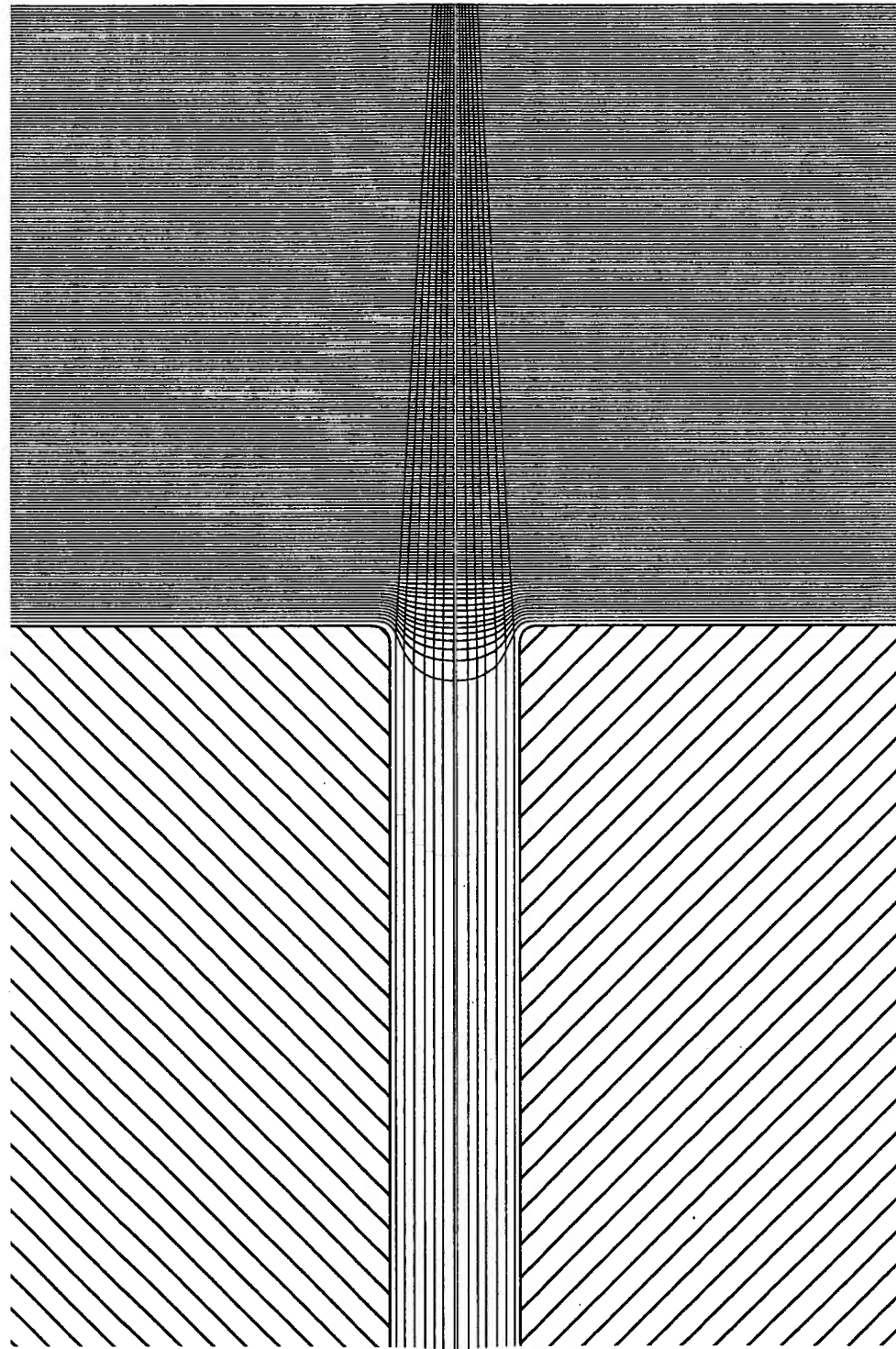


FIG. 11

Beam Extraction $E=27.5$ kV/cm, $\varnothing=1\mu\text{m}$

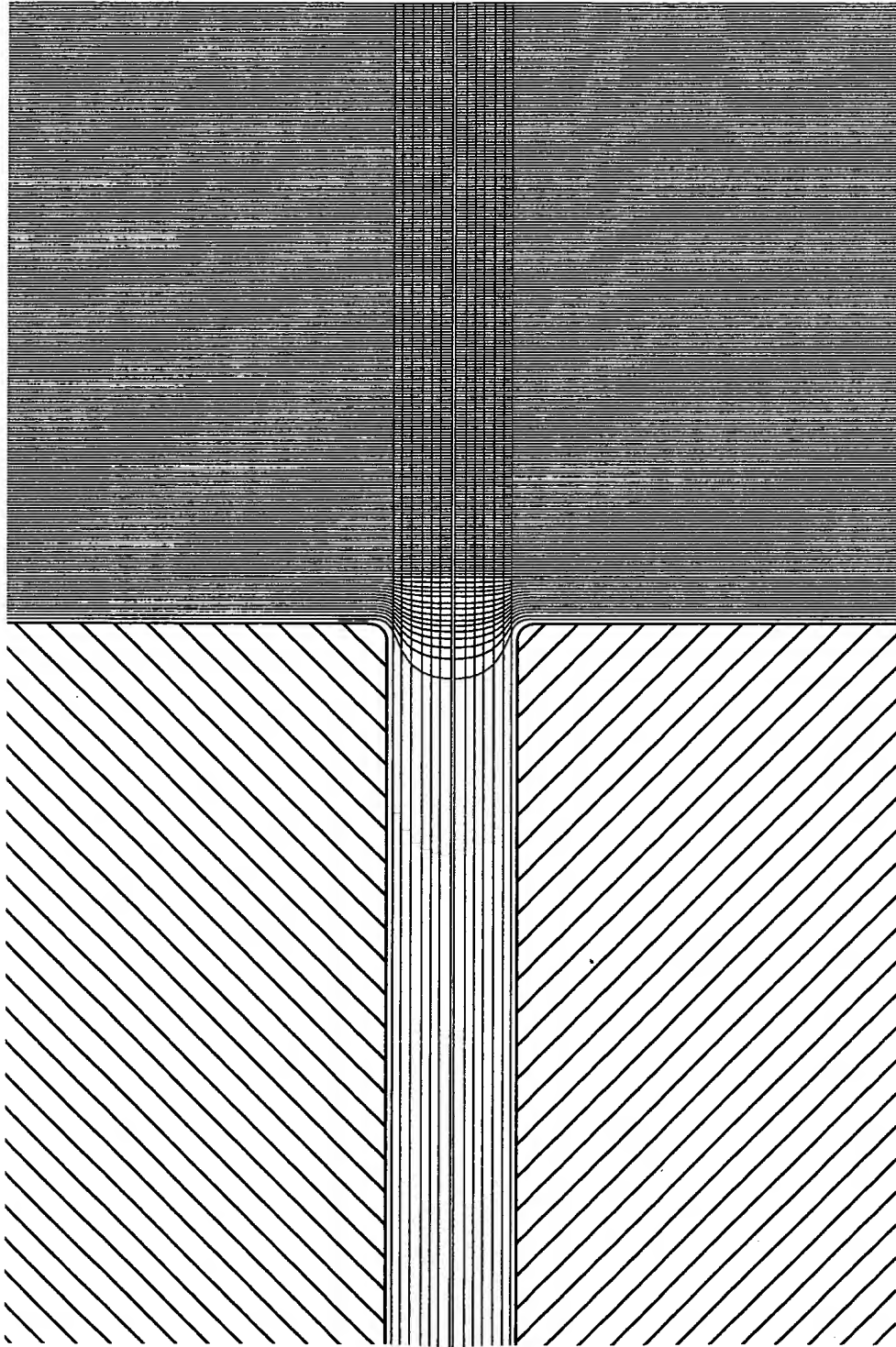


FIG. 12

Beam Extraction Comparison at $E=300$ kV/cm

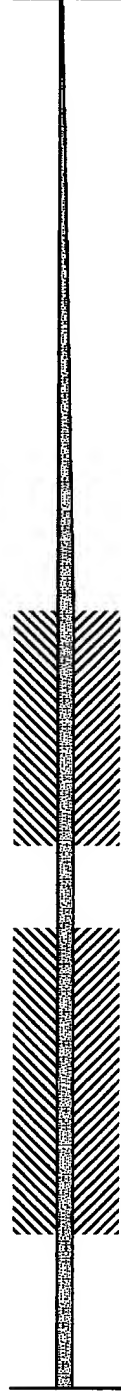
Plasma Potential (U_p) = 46V



Plasma Potential (U_p) = 100V



Plasma Potential (U_p) = 150V

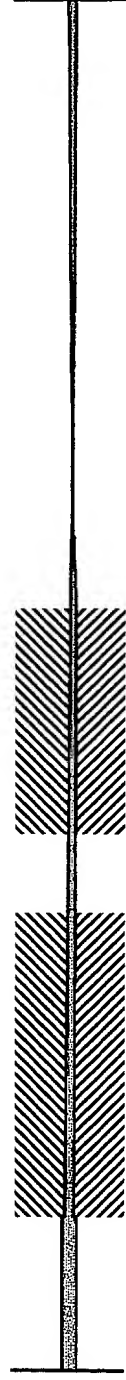


0 18.6 37.3 55.9 74.6 93.2
 $Z[\mu\text{m}]$

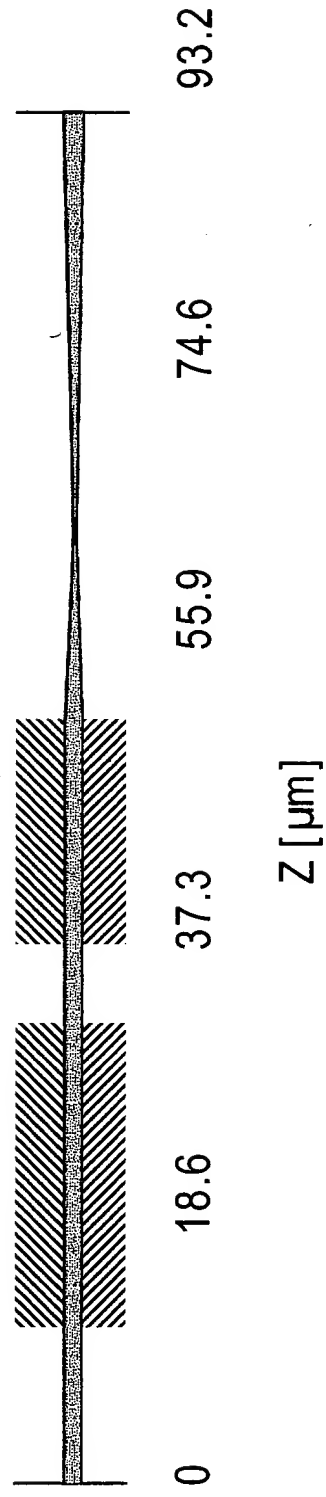
FIG. 13

Beam Extraction Comparison at $E=300$ kV/cm

Aperture diameter = $0.5\ \mu\text{m}$



Aperture diameter = $1\ \mu\text{m}$



Comparison of Beamlets at Diameter = $1\mu\text{m}$

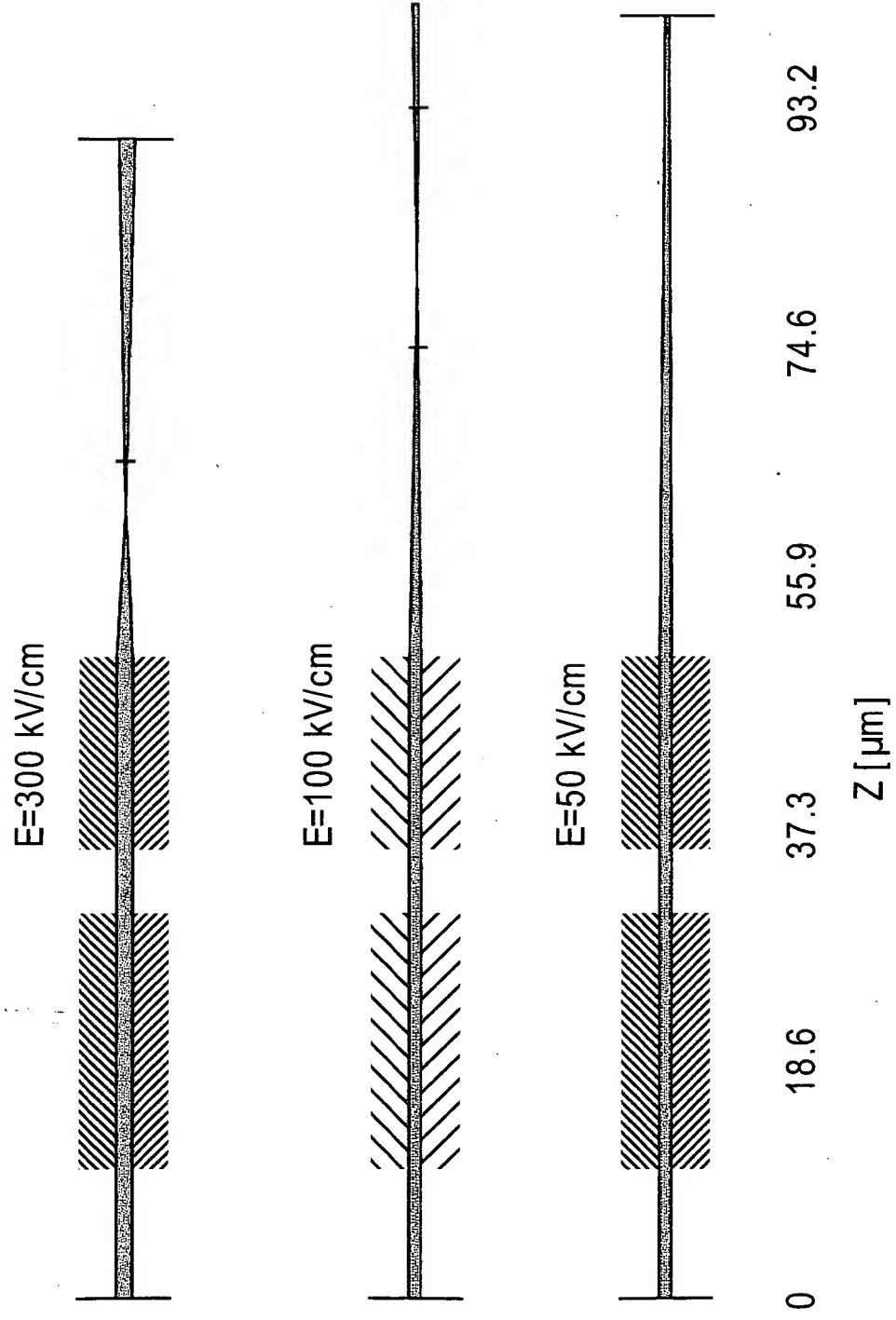
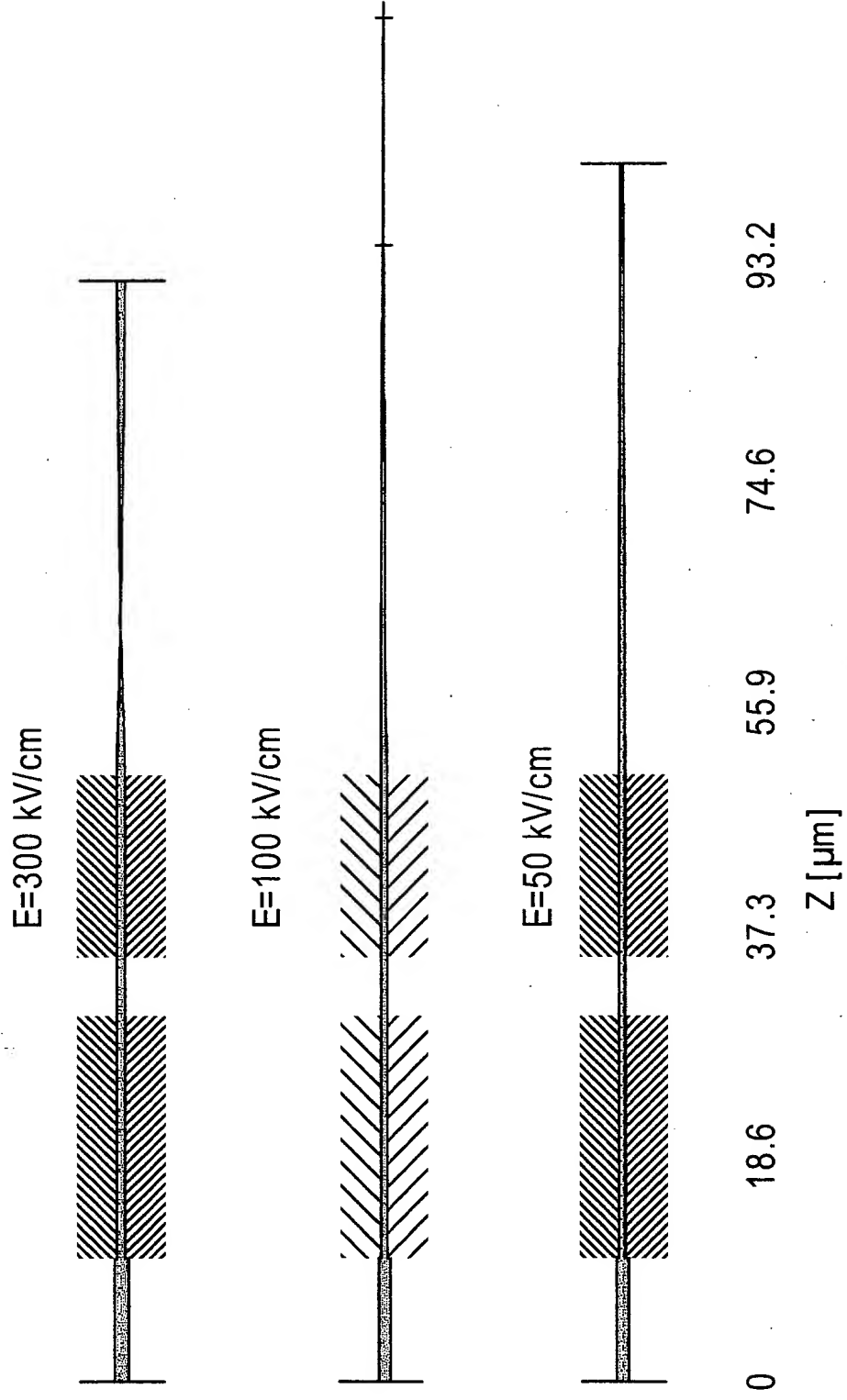


FIG. 15

Comparison of Beamlets at Diameter = $0.5\mu\text{m}$



ANGLE*10** -2

FIG. 16

xtract35
Density = 100x
E = 300 kV/cm
Mass = 40
Diameter = 1 μ m

-1 MESH UNIT=3.50E-6 cm
RMS-EMITTANCE=2.6E-4 cm* mRod
RMS-BRILLIANCE=2.2E-6 A/(cm* mRod)** 2
-15 0 15 FOCUS-ELLIPSE AT Z=4.2E-3 cm from origin
RADIUS/UNIT Rf=2.29E-5 cm, Af=14.42 mRod
UP=55.2, TE=5.0 eV, Ut=5.0 eV, MASS=40.0, TI=1.0eV, USPUT=15.0 V
8.49E-13 A, 1.00E-4 A/cm** 2, 1.28E9/cm** 3, DEBYE=13298.506 UNITS, HOLD OF DENS

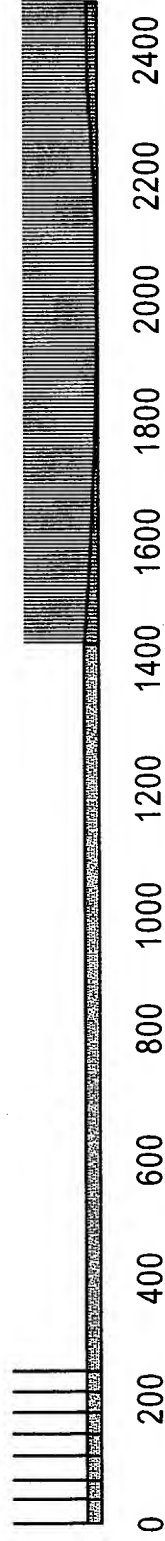


FIG. 17

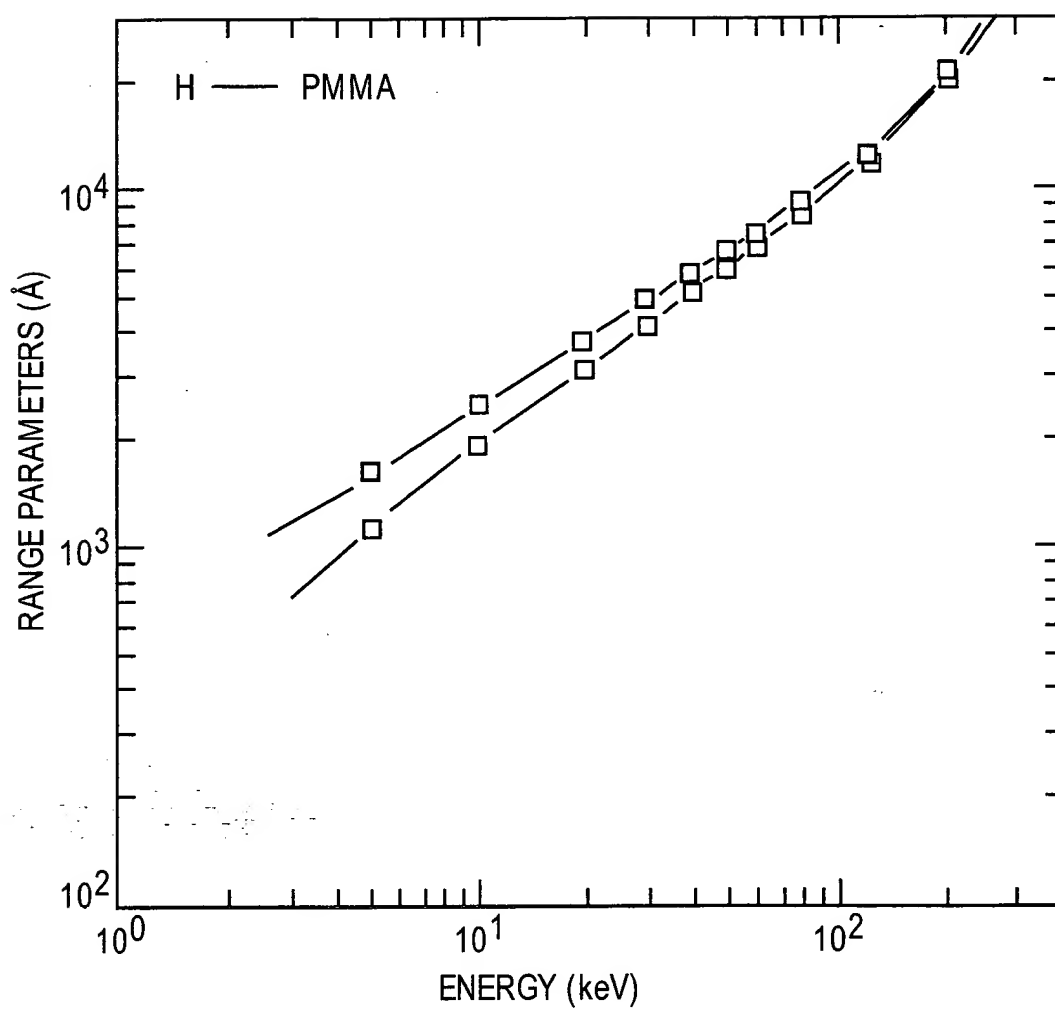


FIG. 18

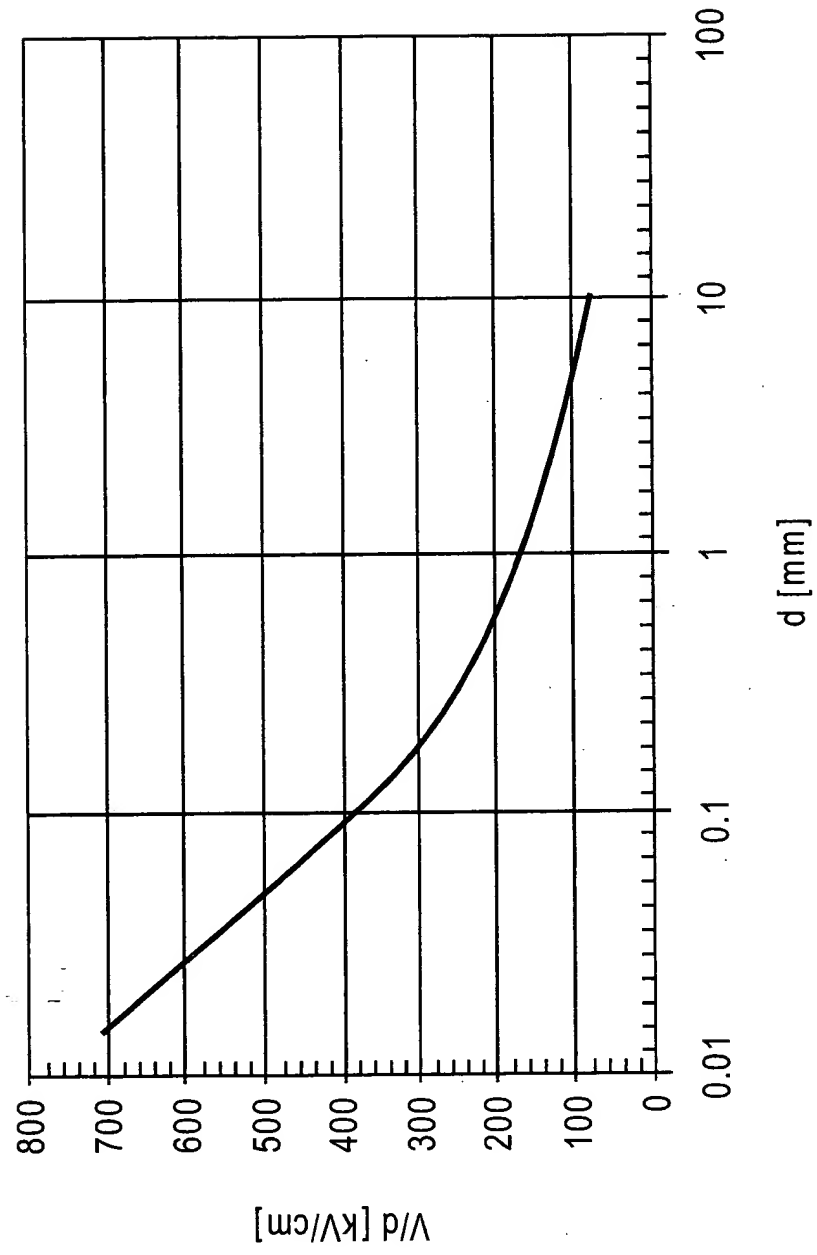


FIG. 19

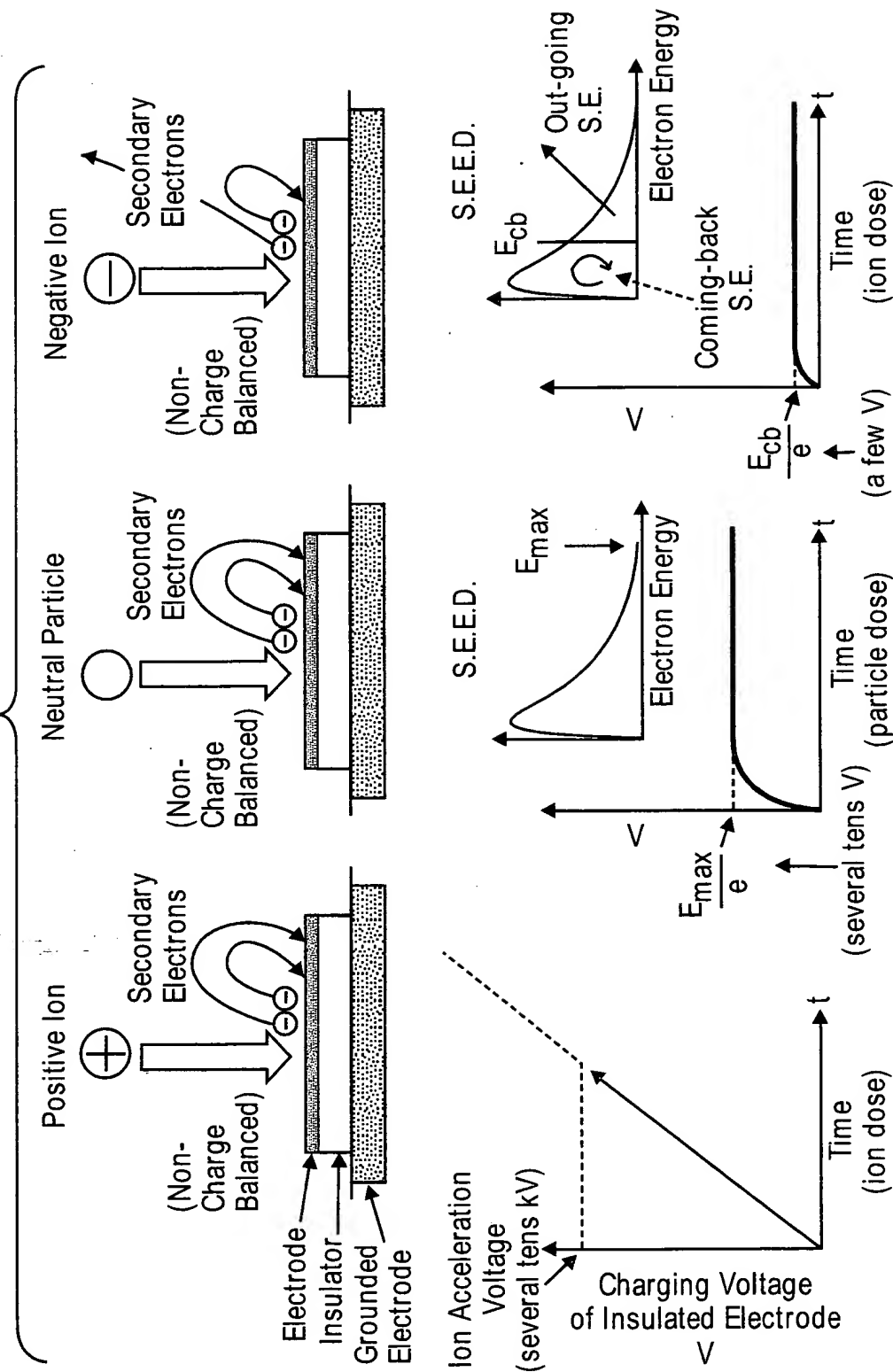


FIG. 20

